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TANTALUM

Element Symbol: **Ta**

Atomic Number: **73**

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International Year of
CHEMISTRY
2011



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Tantalum was discovered in 1802 in Sweden by Anders Ekeberg. He named it after Tantalus in Greek mythology. Tantalus was condemned to eternal thirst for giving ambrosia to his people as well as trying to deceive the gods. The extreme resistance to acid attack of tantalum led to Ekeberg naming it after Tantalus due to "...its incapacity when immersed in acid to absorb any acid and be saturated."

Tantalum is a dense metal (SG 16.7) with a high melting point of 3017°C. This high melting point was utilized in the manufacture of electric light filaments before being superseded by tungsten. The Titanic boasted tantalum filament electric lights which had a much longer life than carbon filament bulbs. The high melting point also makes the metal ideal for application in jet aircraft engines. Nearly every piece of electronic equipment from mobile phones to computers and toys utilize tantalum capacitors. Without these capacitors electronic devices would be bulkier and less capable. Its chemical resistance enables the metal to be used in fabrication of chemical processing equipment.

This inertness is also exploited in the manufacture of surgical instruments and surgical implants such as skull plates.

Tantalite, a composite of iron, manganese, and tantalum oxides, is one of several tantalum ores of economic importance. Australia has been a leading producer of tantalum ore. The main location is Wodgina mine in Western Australia. Other large scale producers are Brazil, Canada, China, and Ethiopia. A small amount also comes from the Congo region of Africa. Unfortunately the production from the Congo has been claimed to finance warfare in the area. Because endangered gorillas in the area are being killed, boycotts have been implemented against tantalum.

Tantalum metal is not well known in general but impacts on many aspects of our lives in many ways that we take for granted. It is time for its contribution to become more widely recognised.

Provided by the element sponsor sponsor ChemCentre

ARTISTS DESCRIPTION

The image featured the rods used in the manufacture of light filaments and the light globes from the Titanic, which were made of Tantalum.

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